

In the claims:

1. -2 (Canceled)

3. (Currently Amended) A search method in a CDMA mobile communication scheme, characterized in that

a receiving section which receives a reception signal sent through a radio channel, an analog/digital conversion section which converts the reception signal into a digital baseband signal, a multi-path processing section which includes a plurality of searcher sections and a plurality of finger sections and outputs a plurality of detection signals by processing multi-paths contained in the baseband signal, a RAKE combining section which adds the detection signals to output a combined signal, a signal processing section which ~~combines-processes~~ the combined signal, and a control section which controls the searcher sections are provided,

the control section generates a control signal for setting the plurality of searcher sections as two types of function-specific searchers which are a cell searcher and a delay spread searcher on the basis of four signals based on effective path timing information on a delay profile of a reception signal output from the searcher section, effective path energy information of a reception signal processed by the finger section, current reception quality associated with a user and output from the signal processing section, and service quality required for the user and registered in system data, and

a control signal is changed to optimally maintain set states of the plurality of searcher sections.

4. (Original) A search method in a CDMA mobile communication scheme according to claim 3, characterized in that

the control section outputs a search range control signal and search width offset control signal to one searcher section so as to make the searcher section operate as a cell searcher which searches an entire radius of a cell, and

outputs a search range control signal and search width offset control signal to the plurality of searcher sections so as to make the searcher sections operate as delay spread searchers which respectively search a plurality of multi-paths,

the searcher section comprises a plurality of groups of correlators each of which receives, together with a baseband signal, a new spreading code obtained by performing delay processing with respect to a spreading code from a spreading code generator by a search width offset delay circuit and a search delay circuit, and performs despreading, a plurality of groups of adders which add correlation values output from the groups of correlators by a designated number of times, and an effective path determining section which searches for a reception timing with a high level from the correlation values after addition and determines whether a corresponding path is an effective path, and

the search width offset delay circuit controls a search start timing in accordance with a search width offset control signal from the control section, and the search delay circuit controls a search range in accordance with a search range control signal from the control section.

5. (Original) A search method in a CDMA mobile communication scheme according to claim 4, characterized in that

the search range control signal for making the searcher operate as the cell searcher sets a value equivalent to a cell radius as a search range, and the search width offset control signal for making the searcher operates as the cell searcher sets 0 as an offset value, and

the search range control signal for making the searcher operate as the delay spread searcher sets a width of peak levels calculated from effective path timing information

on a delay profile of a reception signal as a search range, and the search width offset control signal for making the searcher operates as the delay spread searcher sets a start timing of a peak level calculated from effective path timing information on a delay profile of a reception signal as an offset value.

6. (Original) A search method in a CDMA mobile communication scheme according to claim 4, characterized in that if a new cell searcher or delay spread searcher must be assigned as the number of users or multi-paths is required to increase while all the searchers are used, the control section obtains numerical values, for all the delay spread searchers in use, calculated by multiplying differences, obtained by subtracting current reception quality values associated with users and output from the signal processing section from service quality values required for the users and registered in system data, by energy information values in effective paths of target delay spread searchers, releases a delay spread searcher in use which exhibits a lowest value of the numerical values, and assigns the released searcher to a new user or multi-path.

7. (Original) A search method in a CDMA mobile communication scheme according to claim 4, characterized in that the control section adds products of pieces of energy information of a plurality of paths not less than a predetermined level on a delay profile of the delay spread searcher and pieces of position information to calculate a sum total of the products, calculates position information of the total sum, compares the position information with a threshold of a search range of the delay spread searcher, and changes the search range of the searcher, if the comparison result indicates that the threshold of the search range is exceeded, thereby performing control to match a position of a median of a search range threshold with a position in the sum total.

8. (canceled)

9. (Currently Amended) A receiving apparatus in a CDMA mobile communication scheme, characterized by comprising a receiving section which receives a reception signal sent through a radio channel, an analog/digital conversion section which converts the reception signal into a digital baseband signal, a multi-path processing section which includes a plurality of searcher sections and a plurality of finger sections and outputs a plurality of detection signals by processing multi-paths contained in the baseband signal, a RAKE combining section which adds the detection signals to output a combined signal, a signal processing section which processes ~~combines~~ the combined signal, and a control section which controls said searcher sections,

said control section including means for generating a control signal for setting said plurality of searcher sections as two types of function-specific searchers which are a cell searcher and a delay spread searcher on the basis of four signals based on effective path timing information on a delay profile of a reception signal output from said searcher section, effective path energy information of a reception signal processed by said finger section, current reception quality associated with a user and output from said signal processing section, and service quality required for the user and registered in system data, and means for changing a control signal to optimally maintain set states of said plurality of searcher sections.

10. (canceled)

11. (New) A search method in a CDMA mobile communication scheme, comprising:

a receiving section which receives a reception signal sent through a radio channel, an analog/digital conversion section which converts the reception signal into a digital baseband signal,

a multi-path processing section which includes:

a plurality of searcher sections and

a plurality of finger sections

and outputs a plurality of detection signals by processing multi-paths contained in the baseband signal,

a RAKE combining section which adds the detection signals to output a combined signal,

a signal processing section which processes the combined signal, and

a control section which controls the searcher sections, wherein

the control section generates a control signal for setting the plurality of searcher sections as two types of function-specific searchers which are a cell searcher and a delay spread searcher on the basis of four signals based on (1) effective path timing information on a delay profile of a reception signal output from the searcher section, (2) effective path energy information of a reception signal processed by the finger section, (3) current reception quality associated with a user and output from the signal processing section, and (4) service quality required for the user and registered in system data, and

a control signal is changed to optimally maintain set states of the plurality of searcher sections.

12. (New) A receiving apparatus in a CDMA mobile communication scheme, comprising:

a receiving section which receives a reception signal sent through a radio channel,

an analog/digital conversion section which converts the reception signal into a digital baseband signal,

a multi-path processing section which includes:

a plurality of searcher sections and

a plurality of finger sections

and outputs a plurality of detection signals by processing multi-paths contained in the baseband signal,

a RAKE combining section which adds the detection signals to output a combined signal,

a signal processing section which processes the combined signal, and

a control section which controls said searcher sections,

said control section including:

means for generating a control signal for setting said plurality of searcher sections as two types of function-specific searchers which are a cell searcher and a delay spread searcher on the basis of four signals based on (1) effective path timing information on a delay profile of a reception signal output from said searcher section, (2) effective path energy information of a reception signal processed by said finger section, (3) current reception quality associated with a user and output from said signal processing section, and (4) service quality required for the user and registered in system data, and

means for changing a control signal to optimally maintain set states of said plurality of searcher sections.